State Trauma Advisory Board
2006 Annual Report

Arizona Department of Health Services
Susan Gerard, Director

Published By
Arizona Department of Health Services
Division of Public Health Services

Bureau of Emergency Medical Services and Trauma System
150 North 18th Avenue
Phoenix, Arizona 85007
Bentley J. Bobrow, M.D., Medical Director
Chairman, State Trauma Advisory Board
Prepared By Vicki A. Conditt, RN, Trauma System Section Chief

This Report Is Provided As Required By A.R.S. § 36-2222(E)(4)

STATE TRAUMA ADVISORY BOARD MEMBERS

- **Bentley Bobrow, M.D. (STAB Chair)** - *BEMS MEDICAL DIRECTOR*
- **Rich Thacher** - *DEPARTMENT OF PUBLIC SAFETY REPRESENTATIVE*
- **Roy Ryals** - *AEMS REPRESENTATIVE*
- **Bill Ashland, R.N.** - *NAEMS REPRESENTATIVE*
- **Michelle Ziemba, R.N., M.S.N.** - *SAEMS REPRESENTATIVE*
- **Stewart Hamilton, M.D.** - *WACEMS REPRESENTATIVE*
- **Charles Frank Allen, M.D.** - *TRAUMA CENTER REPRESENTATIVE*
- **John Porter, M.D.** - *TRAUMA CENTER REPRESENTATIVE*
- **Scott Petersen, M.D.** - *NATIONAL COLLEGE OF SURGEONS*
- **Jeff Farkas** - *AFDA REPRESENTATIVE*
- **Debbie Johnston** - *HOSPITAL ASSOCIATION REPRESENTATIVE*
- **Jim Flaherty, M.D.** - *INDIAN HEALTH SERVICE REPRESENTATIVE*
- **Stuart Alt, M.D.** - *NATIONAL ORGANIZATION-EMERGENCY PHYSICIANS*
- **Ritch Steven** - *NATIONAL ASSOCIATION-RETIRED PERSONS*
- **Kelly Silberschlag** - *REHAB FACILITY REPRESENTATIVE*
- **Robert Galey** - *URBAN ALS BASE HOSPITAL-NOT A TRAUMA CENTER*
- **Philip Johnson, M.D.** - *RURAL ALS BASE HOSPITAL-NOT A TRAUMA CENTER*
- **Mark Venuti** - *AMBULANCE ASSOCIATION REPRESENTATIVE*
- **David Leinenveber, R.N.** - *FIRE DEPT IN COUNTY W/POPULATION OVER 500,000*
- **Anslem Roanhorse** - *TRIBAL HEALTH ORGANIZATION REPRESENTATIVE*

INTRODUCTION

The State Trauma Advisory Board (STAB), created pursuant to A.R.S. § 36-2222, is an advisory body to the Director of the Arizona Department of Health Services (ADHS). STAB is comprised of health care professionals from hospitals and prehospital care agencies, and individuals representing the public who are appointed by the director. STAB's purpose, as mandated by statute, is to: (1) make recommendations on the initial and long-term processes for the verification and designation of trauma center levels, including the evaluation of trauma center criteria; (2) make recommendations on the development and implementation of comprehensive regional emergency medical services and trauma system plans; (3) make recommendations on the state emergency medical services and trauma system quality improvement processes, including the state trauma registry; and (4) submit a report to the director on or before October 1 of each year regarding the board's accomplishments and recommendations.

Injuries, intentional and unintentional, continue to be a significant public health concern in the United States. Traumatic injury refers to acute physical injuries, including burns and head injuries, which pose discernible risk for death or long-term disability. Trauma is estimated to be responsible for over 161,000 deaths annually and for an estimated mortality rate of 55.9 per 100,000 persons. Children are said to account for 25 percent of all traumatic injuries. Injury has been the leading cause of death for children 1 to 14 years of age for decades. These figures are not decreasing; rather, they are on the rise. Trauma is also the leading cause of death for Americans 35 years of age and younger. For all U.S. residents, unintentional injury ranked as the 5th most common cause of death. The number of intentional and unintentional injuries combined each year reflects the true ranking of injury as a leading cause of death in the United States. An organized trauma system as a component of an organized Emergency Medical System is indispensable in reducing the incidence of death and long-term disability from traumatic injury. [1]

Arizona has made significant strides in developing a formal comprehensive trauma system since the Department's grant of authority to establish a formal EMS and trauma system with inter-dependent components, including the designation of Level I, II, III, and IV trauma centers pursuant to administrative rules that took effect on October 6, 2005, the promulgation of state law providing for the American College of Surgeons (ACS) to verify a health care institution's ability to provide trauma services at a specified level, the adoption of internal operating instructions to implement trauma center designation processes and related administrative requirements under rule, and hiring additional trauma program staff. These accomplishments advance Arizona's trauma system toward an inclusive statewide model in which injured citizens are transported to the most appropriate, level-specific trauma facility. This system of care should be available from the most remote locations to the most densely populated areas of the state. While significant progress has been made, there is still much work to be done.

Trauma Center Designation

A.R.S. § 36-2225 mandates, among other things, that the Bureau of Emergency Medical Services and Trauma System (BEMSTS) develop and administer a statewide EMS and trauma system, implement the Arizona EMS and Trauma System Plan, and adopt rules to establish standards designating and de-designating health care institutions as trauma centers. On October 6, 2005, the Governor's Regulatory Review Council approved, with an immediate effective date, the final rulemaking for trauma center designation. The rules, in the new 9 A.A.C. 25, Article 13, provide standards and establish the process for the Department to designate and de-designate health care institutions as Level I, II, III, or IV trauma centers. Designation as a Level I trauma center requires that facilities make available the highest level of resources and capabilities, while designation as a Level IV trauma center requires fewer resources and capabilities.

Appendix A lists each of the seven hospitals that were State designated as Level I trauma centers in 2006 under the now expired 90-Day grace period pursuant to R9-25-1303 of the Trauma Center Designation Rules. These hospitals were providing trauma services as "self-designated" Level I trauma centers prior to their official state designation in 2006. The seven Level I trauma centers designated pursuant to R9-25-1303 can continue operating as Level I trauma centers, and in one case, a Level II trauma center, for 36 months from October 6, 2005, with the proviso that they will seek verification or determination by the American College of Surgeons (ACS) that the health care institution meets the state's criteria for designation during the 36-month period. Thereafter, these trauma centers must have applied for and successfully completed an ACS site visit in order to retain state designation.

Determining, by way of a standardized criterion-based process, the resources and capabilities of health care institutions that provide trauma services ensures that health care institutions with the requisite resources and capabilities are appropriately matched with each patient's treatment needs. Matching the appropriate health care institution with the treatment needs of patients improves outcomes and utilizes precious healthcare resources in a cost-effective manner.

Establishing a formal process for state designation of trauma centers is the keystone for developing a more comprehensive and effective state EMS and trauma system through which trauma-related morbidity and mortality can be mitigated. Thirty years of research consistently suggests that the death rates of severely injured patients are reduced by 20 to 25 percent when treated at trauma centers within an organized statewide trauma system.

On July 14, 2006, Robert L. Coscia, M.D., F.A.C.S., past president of the ACS Committee on Trauma, Verification Review Committee, conducted a one-day seminar at the Cowden Center at John C. Lincoln Hospital – North Mountain. Dr. Coscia discussed trauma systems, the ACS trauma center verification process, and provided an overview of the trauma center standards and requirements in the new ACS Resources for Optimal Care of the Injured Patient, soon to be released. Dr. Coscia also answered questions from representatives from the six state designated trauma centers, one ACS verified trauma

center, health care institutions interested in trauma center designation, and ADHS. There are a number of hospitals currently working toward ACS verification or state designation as Level IV trauma centers. This event provided staff from a number of Arizona hospitals with helpful information and guidance in preparing for an ACS site visit.

Arizona State Trauma Registry

The State Trauma Registry (STR) is another critical component in developing Arizona's formal trauma system, and is housed under the Office of Health Registries within the Bureau of Public Health Statistics. Appendix B lists the nine hospitals currently reporting to the STR, and four new hospitals expected to begin reporting trauma data this year. The STR underwent a system-wide data standardization project that included an update to the data collection format, conversion of trauma data to a single configuration, standardization of required data elements, creation of a data element dictionary, and creation of a trauma registry user's manual.

Completion of the standardization project will enable the STR to provide data to drive injury prevention efforts, public policy, enhancing trauma system performance, identifying and evaluating trauma system best practices, identifying and evaluating gaps in patient treatment and outcomes, reviewing trauma resource utilization, tracking patient outcomes, developing performance standards, and measuring overall trauma system performance.

BEMSTC provides trauma registry software and training to health care institutions participating in the STR. BEMSTS contracts with the two trauma registry software vendors for support and maintenance of trauma data collection and data reporting for all participants.

Appendix C contains the initial STR reports developed since the completion of the standardization project in August 2006. However, the Department is in the process of addressing data issues and inconsistencies. The data reflected on the attached reports is likely to change in future reports.

Arizona Trauma System Quality Assurance and System Improvement Committee

The Arizona Trauma System Quality Assurance and System Improvement Committee (AZTQ), a subcommittee of the State Trauma Advisory Board, is comprised of individuals representing EMS and trauma services throughout the state. AZTQ is responsible for 1) recommending standards for a uniform data collection system for the STR; 2) maintaining confidentiality of Registry data; 3) the use of aggregate trauma data; 4) the release of trauma data; and 5) developing methods for continuous quality improvement of STR data and the statewide trauma system quality assurance process.

ADHS must ensure that trauma data are collected and submitted to the ADHS by participating health care institutions, and that the ADHS disseminates aggregate trauma data to the participating trauma centers and hospitals, general public, health care

providers, policy and program planners, and other interested entities pursuant to and in compliance with federal and state confidentiality laws. Through the actions and recommendations of AZTQ and STAB, the ADHS is developing processes and policies for the submission of and dissemination of trauma registry data, determining the essential trauma data elements required of Level IV trauma centers for inclusion into the trauma registry, and rulemaking necessary to enforce trauma data collection, submission, and dissemination.

American College of Surgeons (ACS) Committee on Trauma - Trauma System Consultation

BEMSTS has initiated the process of requesting the ACS Committee on Trauma to conduct a Trauma System Consultation in the spring of 2007. The purpose of the ACS trauma system consultative visit is to provide a comprehensive, on-site trauma system review with additional focus on areas defined by the requesting agency. The ACS review team provides a critical analysis of the current Arizona EMS and trauma system status and formulates recommendations for system improvement and enhancement.

An ACS system consultation requires substantial time, resources, and commitment from ADHS, BEMSTS, trauma and EMS system partners, professional organizations and regional EMS councils. To ensure Arizona is well prepared for the ACS system consultation, the STAB Executive Committee met on August 11, 2006 to initiate a strategic plan for preparing for the system consultation visit which will include STAB's approval of and participation in appointing a task force to begin the administrative process.

Data Initiatives

Prehospital data collection is another important initiative essential to an effective and comprehensive EMS and trauma system. The Arizona EMS and trauma system is divided into four EMS Regional Councils: Northern, Western, Southeastern and Central. Together these regional councils form the emergency medical services coordinating system. The Southeastern Region has instituted an electronic prehospital data collection system, which is also being considered for use by EMS providers in the Western Region. The Central Region is in the process of instituting an electronic data collection system that will include 23 EMS providers in Maricopa County and Tucson Fire Department. BEMSTS is working with the four EMS regions and the EMS providers to ensure that standardized electronic prehospital data collection will be instituted. BEMSTS has also been working with the Governor's Traffic Safety Advisory Council, within the Governor's Office of Highway Safety, concerning the collection and reporting of traffic-related morbidity and mortality.

The Bureau will be sponsoring a one-day EMS and Trauma Data Education offering on October 27, 2006. Dr. Clay Mann, the co-project investigator for the National EMS Information System, coordinated by the National Highway Traffic Safety

Administration's Office of Emergency Medical Service, and lead project investigator for the National Trauma Registry Standardization Project will participate in the Bureau sponsored Data Leadership Meeting in Phoenix. The National Trauma Registry Standardization Project is designed to provide a national picture of the incidence of trauma and supports the efforts of the American College of Surgeons to update and strengthen the National Trauma Data Bank. The EMS regions are invited to provide updates about their EMS data collection efforts. ADHS trauma registry personnel are also invited and asked to provide information about the Arizona trauma registry. Dr. Mann will share best practices for moving Arizona towards a position of leadership in data collection.

Statewide EMS and Trauma System Assessment

BEMS prepared a 2005 Annual EMS and Trauma System Assessment (Assessment) to determine statewide system gaps, and identify system needs. The Assessment was comprehensive in scope and was provided to the four EMS Regional Councils for distribution to their respective members. BEMS received a statewide response rate of 58% by EMS providers and health care institutions. Assessment responses were compiled by BEMS and distributed to the four EMS Regional Councils. Results of the Assessment are available on the BEMS website.

Challenges

Arizona is fortunate that the participation of many talented and dedicated professionals and healthcare institutions has resulted in a strong, voluntary trauma system concentrated in the urban core of the state, principally the Phoenix and Tucson metropolitan areas. Additional commitments from facilities in Flagstaff, Yuma and other metropolitan areas add vital capabilities to our system, though their continued participation is problematic due to the high cost associated with readiness. A truly inclusive, statewide trauma system relies on the participation of all trauma centers, Level I through level IV, each of which plays an equally important role in the treatment of the traumatized patient. Identifying opportunities to ensure continuing participation of all facilities must be a high priority.

Conclusion

The State Trauma Advisory Board and BEMS continue to make progress in building the foundation for a comprehensive trauma system. Continued support from and collaboration with ADHS, the Legislature, and stakeholders in the health care community are essential to achieving the overarching goal of reducing mortality and morbidity of the trauma patient.

APPENDIX – A

STATE DESIGNATED LEVEL I TRAUMA CENTERS

John C. Lincoln - North Mountain
250 East Dunlap Avenue
Phoenix, AZ 85020

Banner Good Samaritan Medical Center
925 East McDowell Road
Phoenix, AZ 85006

St. Joseph's Hospital and Medical Center (ACS Verified - Level I)
350 West Thomas Road
Phoenix, AZ 85013

Scottsdale Healthcare - Osborn
7400 E. Osborn
Scottsdale, AZ 85251

Flagstaff Medical Center
1200 N. Beaver Street
Flagstaff, AZ 86001

Maricopa Medical Center
2601 E. Roosevelt
Phoenix, AZ 85008

University Medical Center
1501 N. Campbell Avenue
Tucson, AZ 85724

APPENDIX – B

HOSPITALS CURRENTLY REPORTING TO THE STATE TRAUMA REGISTRY

John C. Lincoln - North Mountain
Phoenix, AZ 85020

Banner Good Samaritan Medical Center
Phoenix, AZ 85006

St. Joseph's Hospital and Medical Center (ACS Verified)
Phoenix, AZ 85013

Scottsdale Healthcare (Osborn)
Scottsdale, AZ 85251

Flagstaff Medical Center
Flagstaff, AZ 86001

Maricopa Medical Center
Phoenix, AZ 85008

University Medical Center
Tucson, AZ 85724

Yavapai Regional Medical Center
Prescott, AZ

Yuma Regional Medical Center
Yuma, AZ

Sierra Vista Regional Medical Center
Sierra Vista, AZ

Tuba City Regional Health Care
Tuba City, AZ

Whiteriver Indian Health Services
Whiteriver, AZ

Phoenix Children's Hospital
Phoenix, AZ

APPENDIX – C

The Arizona State Trauma Registry 2005 Trauma Data is attached at the end of this document.

REFERENCES

[1] U.S. Department of Health and Human Services, Health Resources and Services Administration document *Model Trauma System Planning and Evaluation*, released February 2006.

ARIZONA STATE TRAUMA REGISTRY 2005 TRAUMA DATA

Information about the 2005 Arizona State Trauma Registry (ASTR) Data:

Ten hospitals contributed 2005 trauma data to the Arizona State Trauma Registry (ASTR). ASTR receives data from a limited number of hospitals in Arizona and this data is not representative of all Arizona trauma cases. Seven of the reporting facilities were designated as Level I Trauma Centers at the time that this report was prepared. The remaining three facilities were non-designated.

It was expected that all patients would have an ED Entry Date, as this is the required field used to determine the date range for case submission. However, upon analysis, it was determined that several patients had a blank ED Entry Date field. This issue will be addressed with individual hospitals. For these reporting purposes, patients were included if they had an ED Entry Date or a Hospital Admit Date in the year 2005. There were 21662 records submitted to ASTR meeting these criteria.

This report reflects trauma data as it exists in the ASTR on 9/19/06. During the Phase I and Phase II Data Standardization Project, the State required data elements from hospital registries were converted to a standardized format. This project was necessary in order to be able to prepare meaningful statewide reports. **The numbers in these reports are likely to change as conversion and data entry clean-up issues are identified and addressed.**

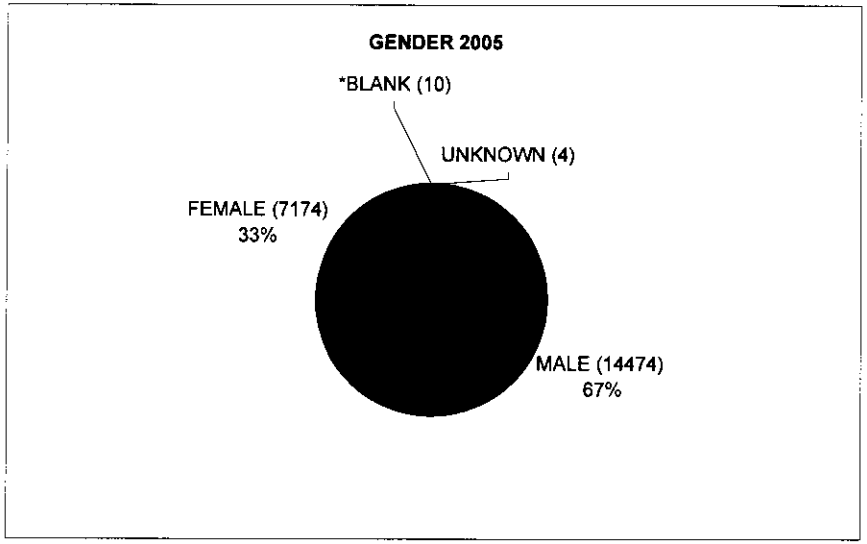
Report Definitions:

*BLANK in this report means that no value was submitted by the hospital for that specific data element.

*NOT DOCUMENTED or *N/D means that the registrar entered a Not Documented response for that specific data element. The ASTR Data Dictionary (revised June 2006) defines Not Documented as "no documentation in record, unknown."

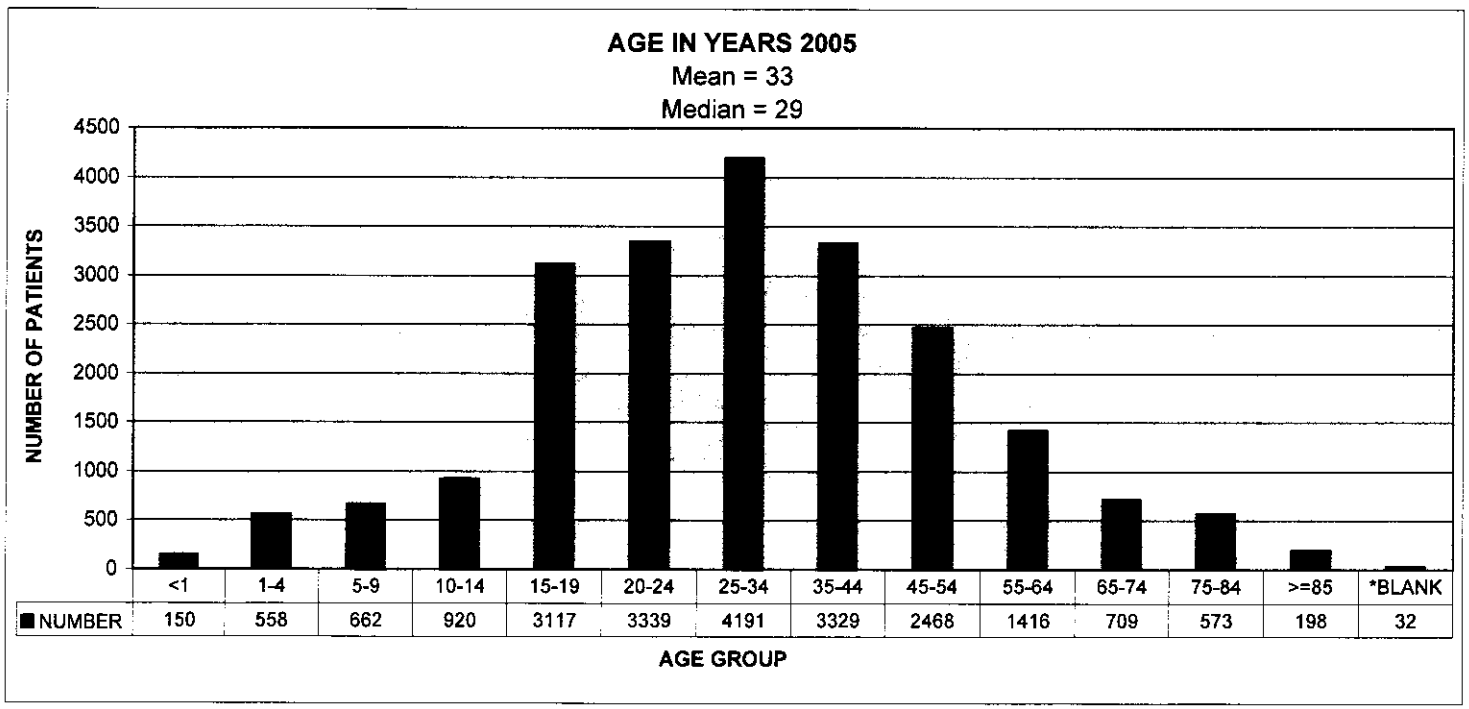
*NOT APPLICABLE or *N/A in this report means that the registrar entered a Not Applicable response for that specific data element. In the ASTR Data Dictionary (revised June 2006), Not Applicable is allowed in instances where the data element does not apply to the specific circumstances of the trauma case. For example, the date of the EMS run sheet would not apply if the patient was transported to the hospital by a relative.

GENDER 2005



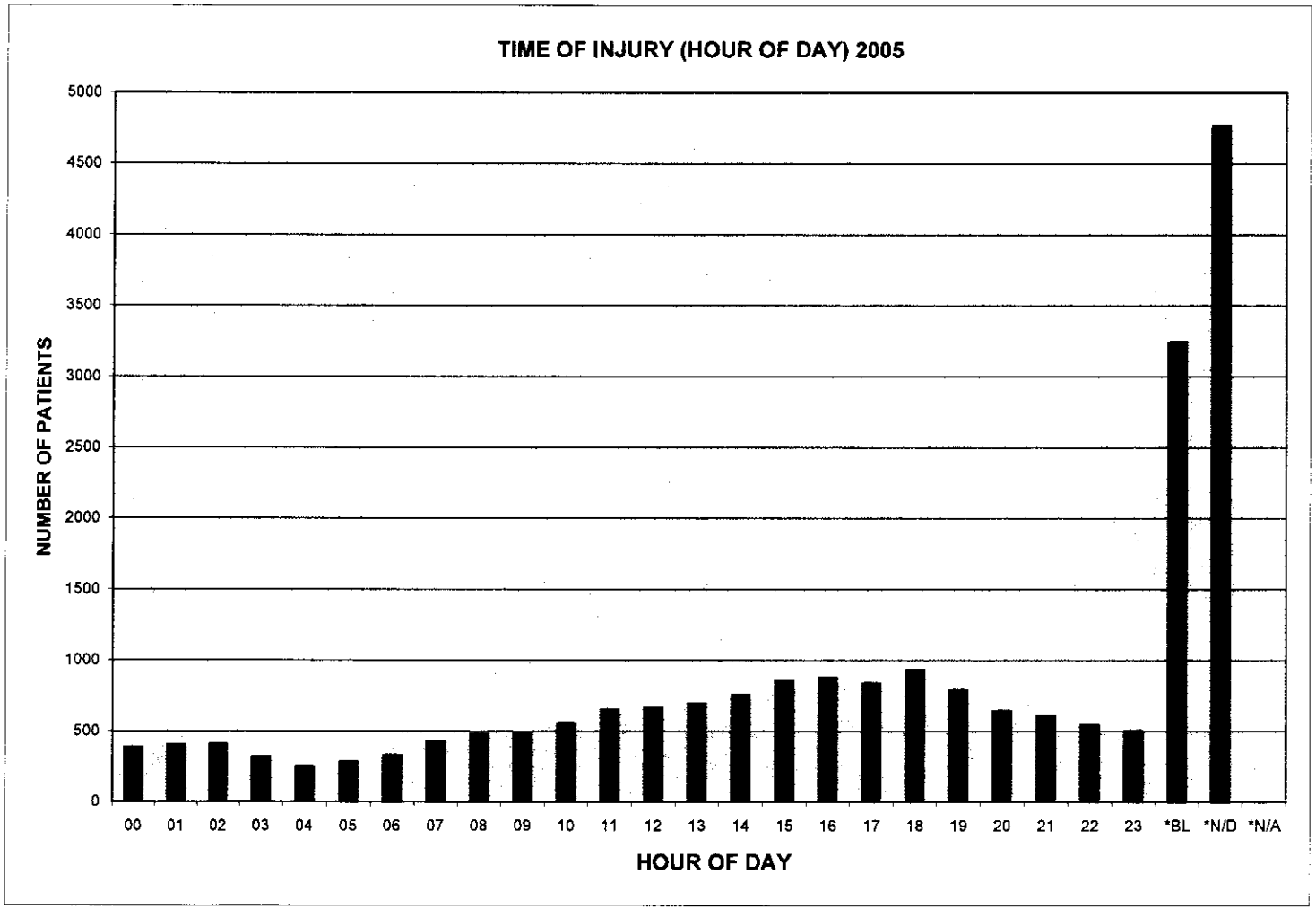
GENDER	NUMBER	PERCENTAGE
MALE	14474	66.82
FEMALE	7174	33.12
*BLANK	10	0.05
UNKNOWN	4	0.02
TOTAL	**21662**	**100.00**

AGE IN YEARS 2005



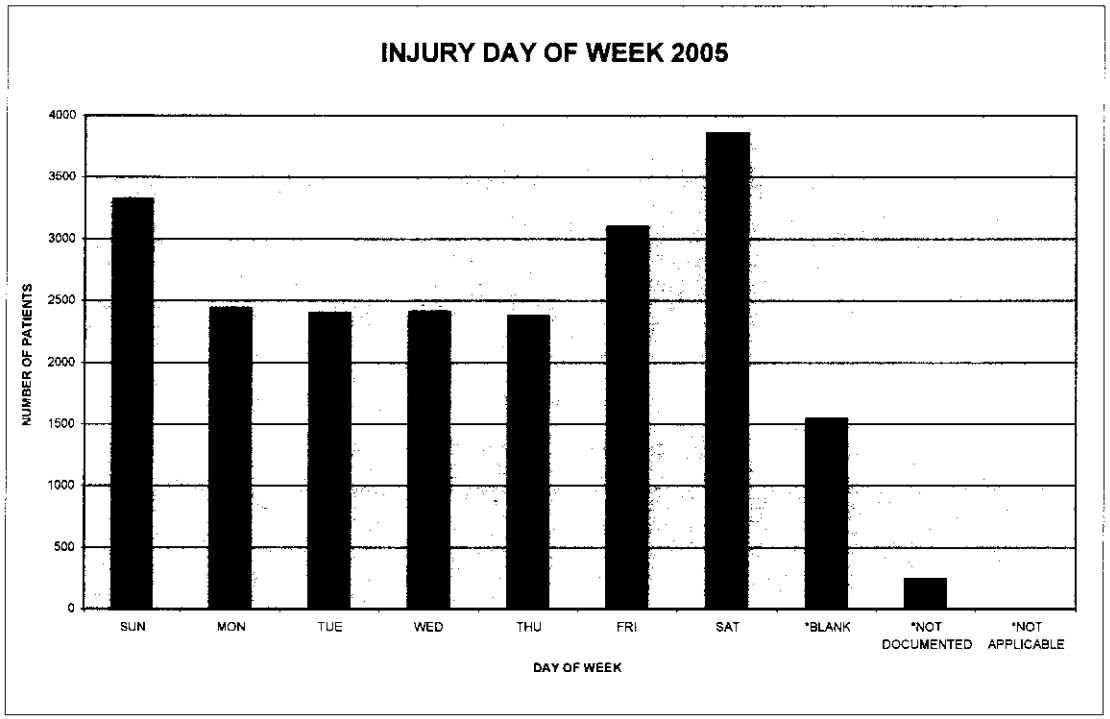
AGE	NUMBER	PERCENT
<1	150	0.69
1-4	558	2.58
5-9	662	3.06
10-14	920	4.25
15-19	3117	14.39
20-24	3339	15.41
25-34	4191	19.35
35-44	3329	15.37
45-54	2468	11.39
55-64	1416	6.54
65-74	709	3.27
75-84	573	2.65
>=85	198	0.91
*BLANK	32	0.15
TOTAL	**21662**	**100.00**

INJURY TIME OF DAY 2005



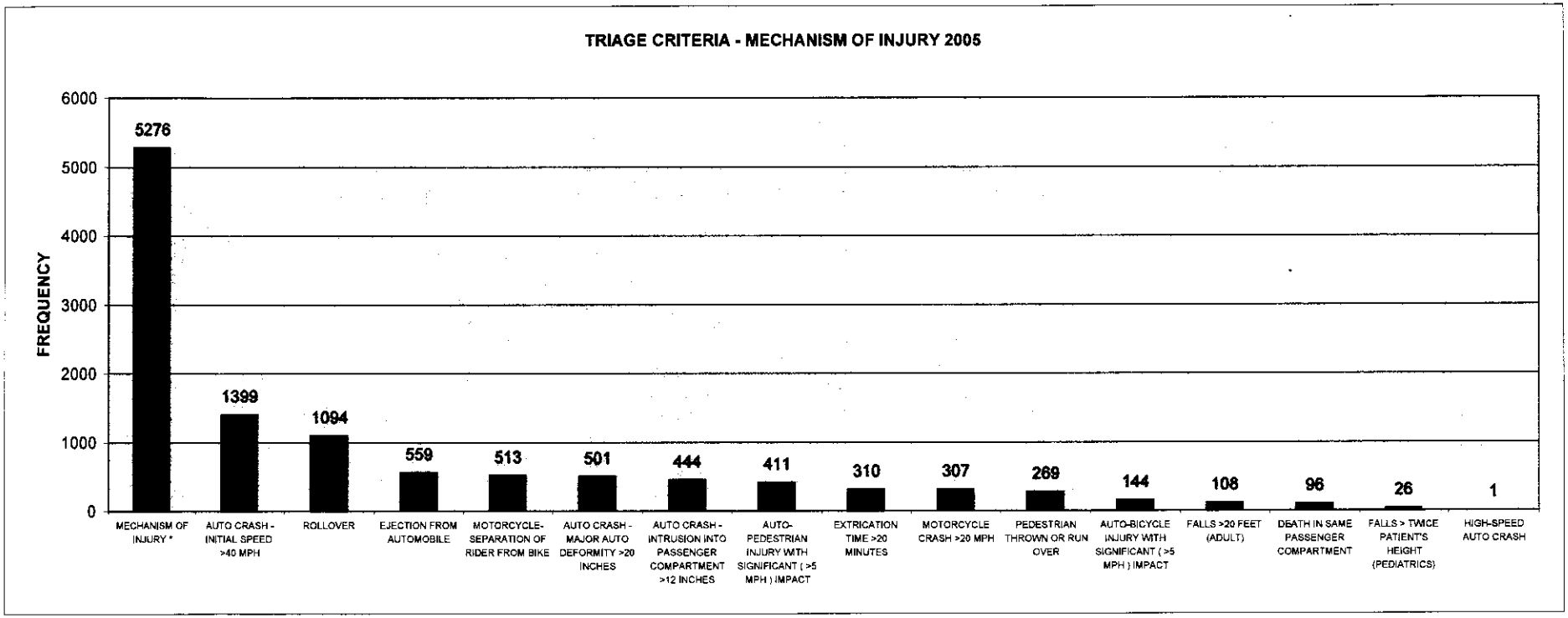
TIME OF INJURY - HOUR OF DAY	NUMBER	PERCENT
00	383	1.77
01	400	1.85
02	406	1.87
03	316	1.46
04	249	1.15
05	282	1.30
06	328	1.51
07	421	1.94
08	479	2.21
09	485	2.24
10	556	2.57
11	649	3.00
12	663	3.06
13	691	3.19
14	752	3.47
15	860	3.97
16	875	4.04
17	838	3.87
18	933	4.31
19	789	3.64
20	644	2.97
21	604	2.79
22	544	2.51
23	501	2.31
*BL	3242	14.97
*N/D	4768	22.01
*N/A	4	0.02
TOTAL	21662	100.00

INJURY DAY OF WEEK 2005



INJURY DATE - DAY OF WEEK	NUMBER	PERCENTAGE
SUN	3321	15.33
MON	2435	11.24
TUE	2396	11.06
WED	2407	11.11
THU	2373	10.95
FRI	3095	14.29
SAT	3855	17.80
*BLANK	1541	7.11
*NOT DOCUMENTED	238	1.10
*NOT APPLICABLE	1	0.00
TOTAL	**21662**	**100.00**

TRIAGE CRITERIA - MECHANISM OF INJURY 2005

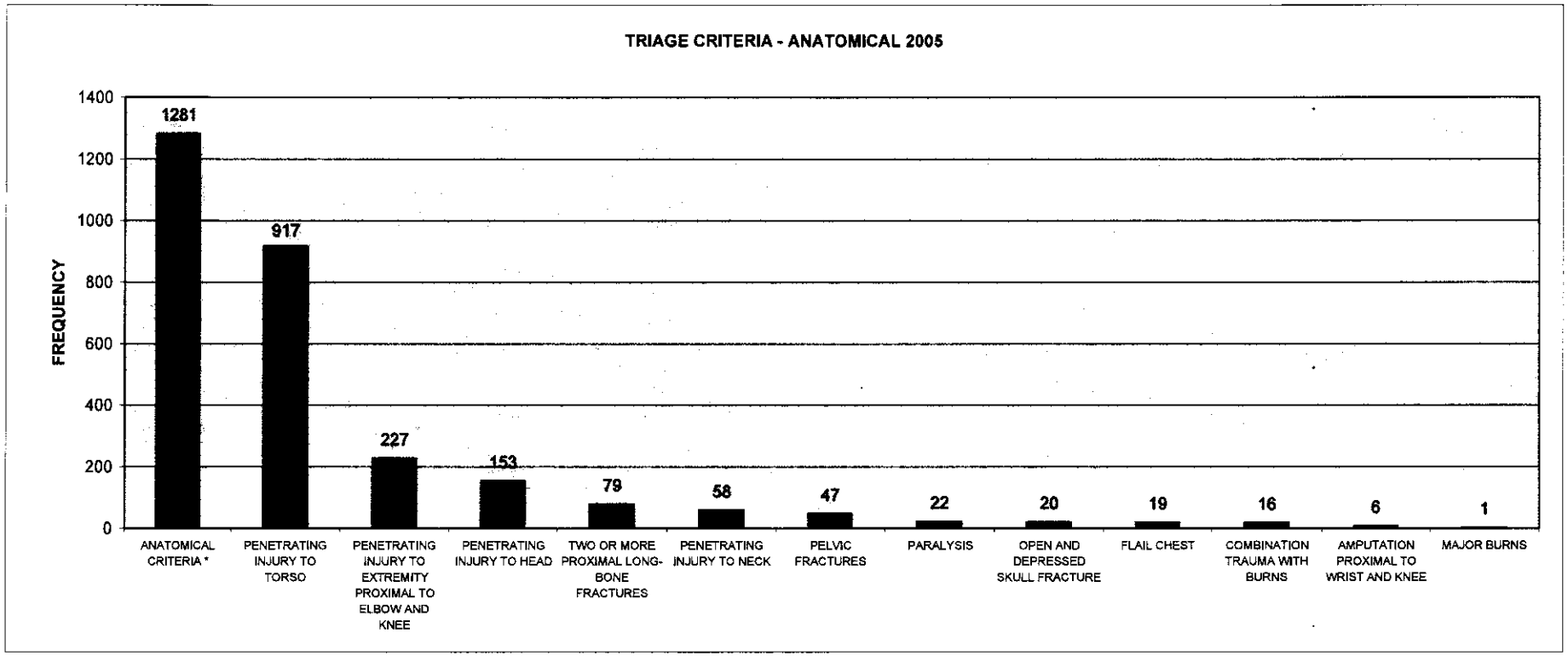


TRIAGE CRITERIA	FREQUENCY
MECHANISM OF INJURY *	5276
AUTO CRASH - INITIAL SPEED >40 MPH	1399
ROLLOVER	1094
EJECTION FROM AUTOMOBILE	559
MOTORCYCLE-SEPARATION OF RIDER FROM BIKE	513
AUTO CRASH - MAJOR AUTO DEFORMITY >20 INCHES	501
AUTO CRASH - INTRUSION INTO PASSENGER COMPARTMENT >12 INCHES	444
AUTO-PEDESTRIAN INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	411
EXTRICATION TIME >20 MINUTES	310
MOTORCYCLE CRASH >20 MPH	307
PEDESTRIAN THROWN OR RUN OVER	269
AUTO-BICYCLE INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	144
FALLS >20 FEET (ADULT)	108
DEATH IN SAME PASSENGER COMPARTMENT	96
FALLS > TWICE PATIENT'S HEIGHT (PEDIATRICS)	26
HIGH-SPEED AUTO CRASH	1
TOTAL	11458

Note: Total number of Triage Criteria = 26394
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

***Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Mechanism of Injury is the highest frequency. The frequency of this category is not a total of the more specific criteria.**

TRIAGE CRITERIA - ANATOMICAL 2005

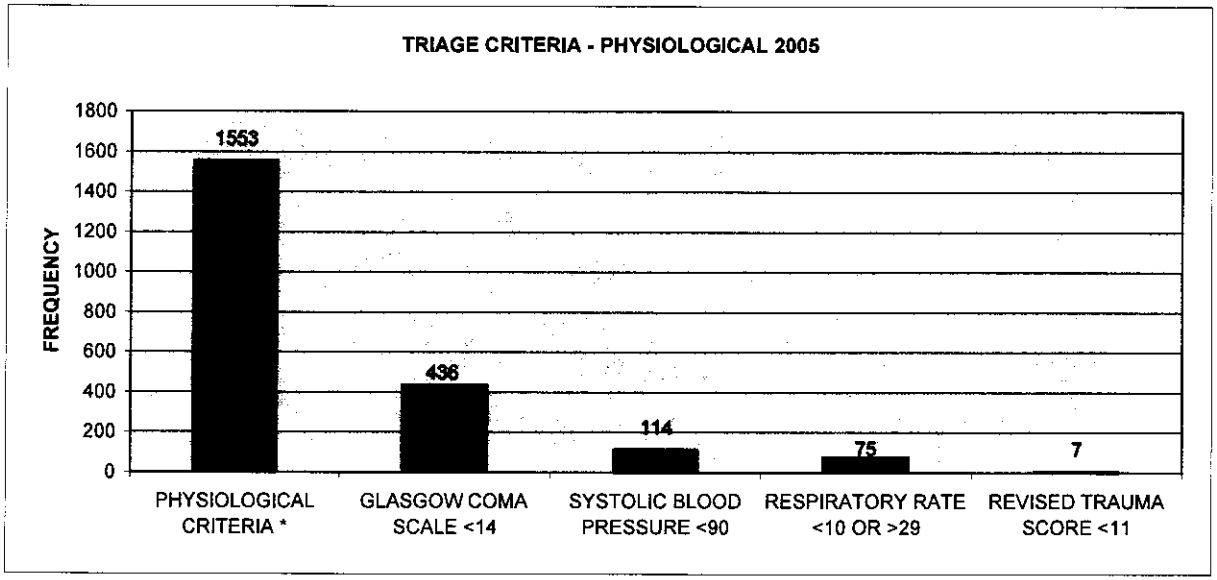


TRIAGE CRITERIA	FREQUENCY
ANATOMICAL CRITERIA *	1281
PENETRATING INJURY TO TORSO	917
PENETRATING INJURY TO EXTREMITY PROXIMAL TO ELBOW AND KNEE	227
PENETRATING INJURY TO HEAD	153
TWO OR MORE PROXIMAL LONG-BONE FRACTURES	79
PENETRATING INJURY TO NECK	58
PELVIC FRACTURES	47
PARALYSIS	22
OPEN AND DEPRESSED SKULL FRACTURE	20
FLAIL CHEST	19
COMBINATION TRAUMA WITH BURNS	16
AMPUTATION PROXIMAL TO WRIST AND KNEE	6
MAJOR BURNS	1
TOTAL	2846

Note: Total number of Triage Criteria = 26394
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

***Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Anatomical Criteria is the highest frequency. The frequency of this category is not a total of the more specific criteria.**

TRIAGE CRITERIA - PHYSIOLOGICAL 2005

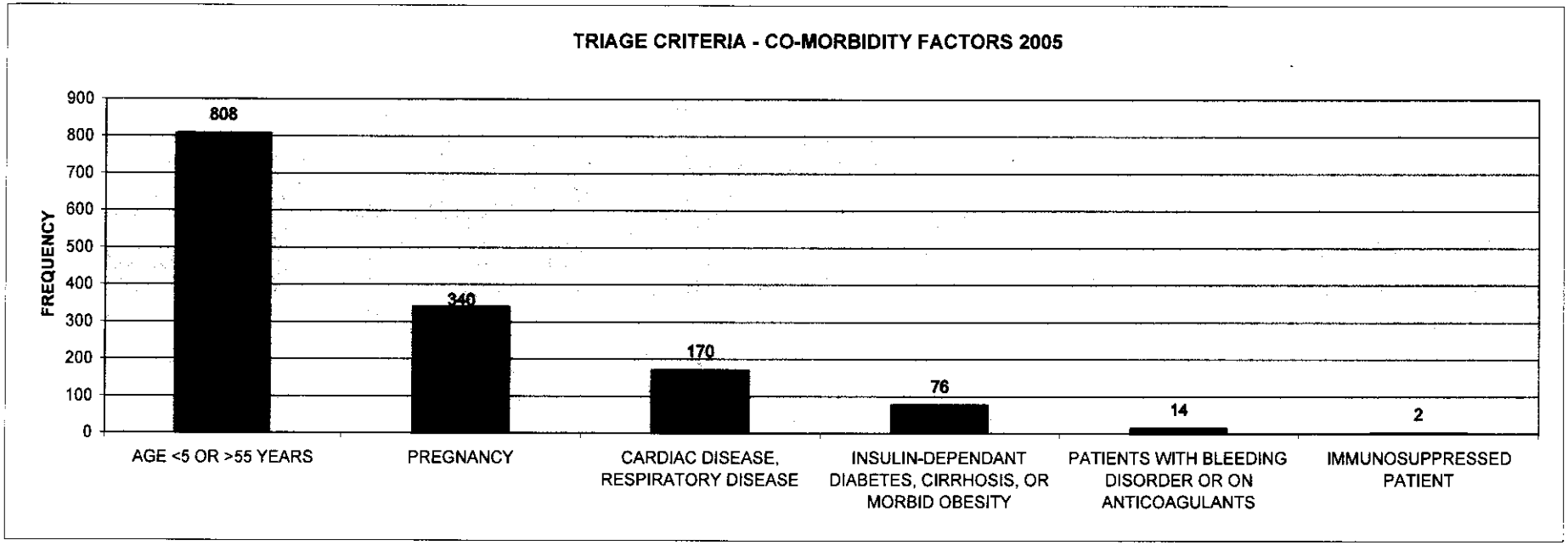


TRIAGE CRITERIA	FREQUENCY
PHYSIOLOGICAL CRITERIA *	1553
GLASGOW COMA SCALE <14	436
SYSTOLIC BLOOD PRESSURE <90	114
RESPIRATORY RATE <10 OR >29	75
REVISED TRAUMA SCORE <11	7
TOTAL	2185

Note: Total number of Triage Criteria = 26394
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

***Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Physiological Criteria is the highest frequency. The frequency of this category is not a total of the more specific criteria.**

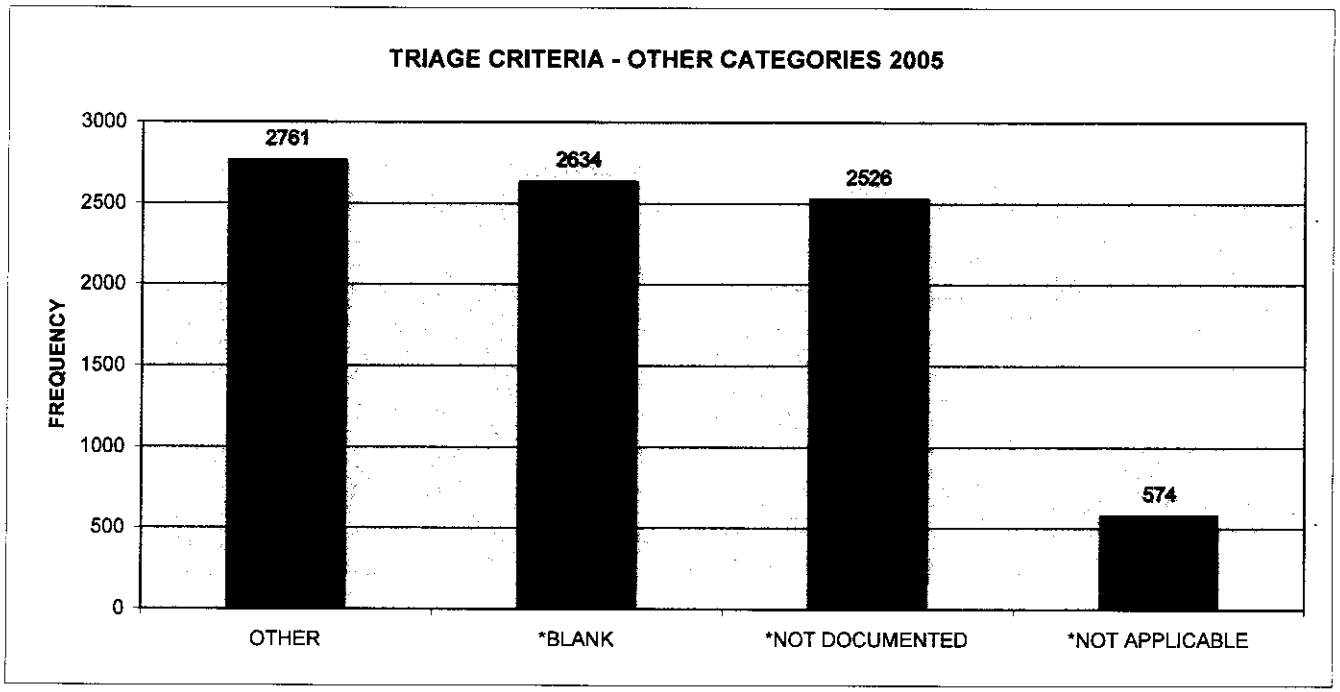
TRIAGE CRITERIA - CO-MORBIDITY FACTORS 2005



TRIAGE CRITERIA	FREQUENCY
AGE <5 OR >55 YEARS	808
PREGNANCY	340
CARDIAC DISEASE, RESPIRATORY DISEASE	170
INSULIN-DEPENDANT DIABETES, CIRRHOSIS, OR MORBID OBESITY	76
PATIENTS WITH BLEEDING DISORDER OR ON ANTICOAGULANTS	14
IMMUNOSUPPRESSED PATIENT	2
TOTAL	1410

Note: Total number of Triage Criteria = 26394
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

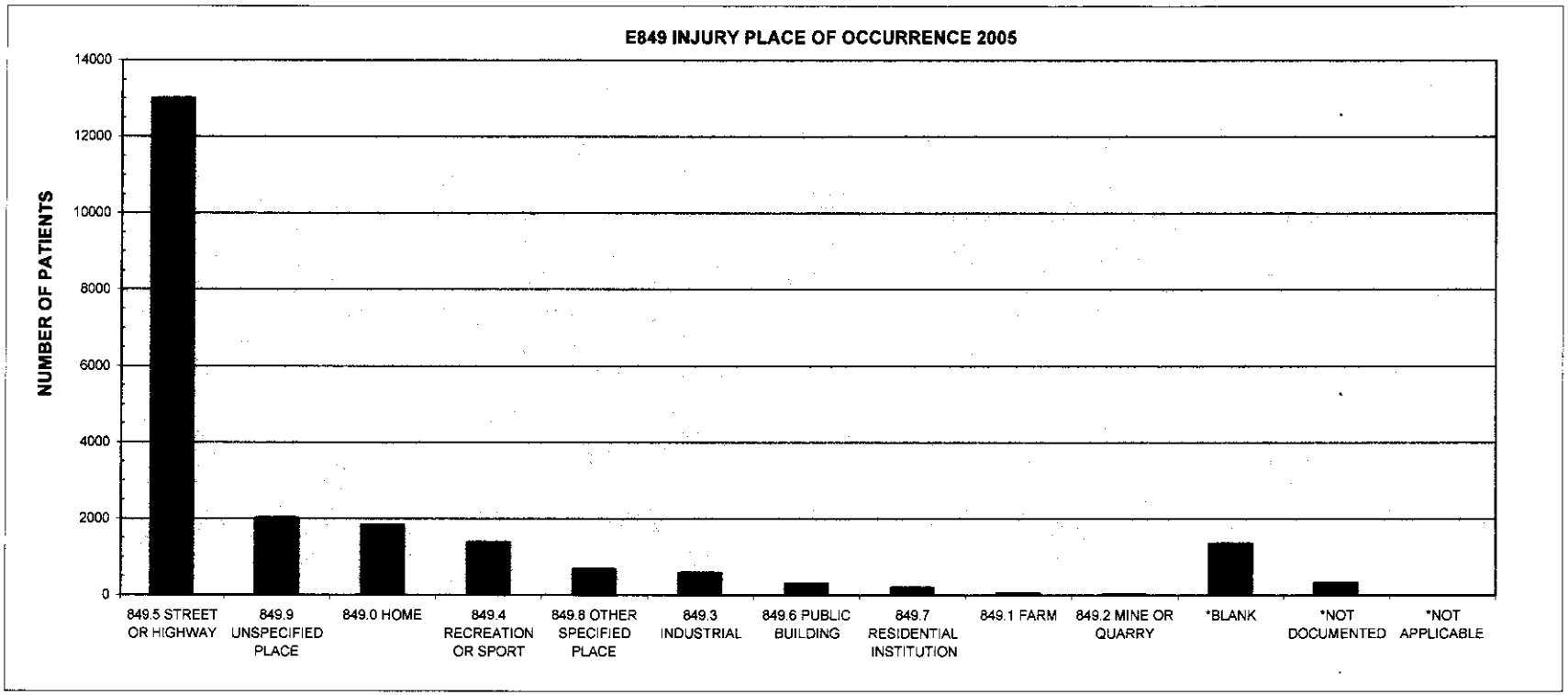
TRIAGE CRITERIA - OTHER CATEGORIES 2005



TRIAGE CRITERIA	FREQUENCY
OTHER	2761
*BLANK	2634
*NOT DOCUMENTED	2526
*NOT APPLICABLE	574
TOTAL	8495

Note: Total number of Triage Criteria = 26394
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

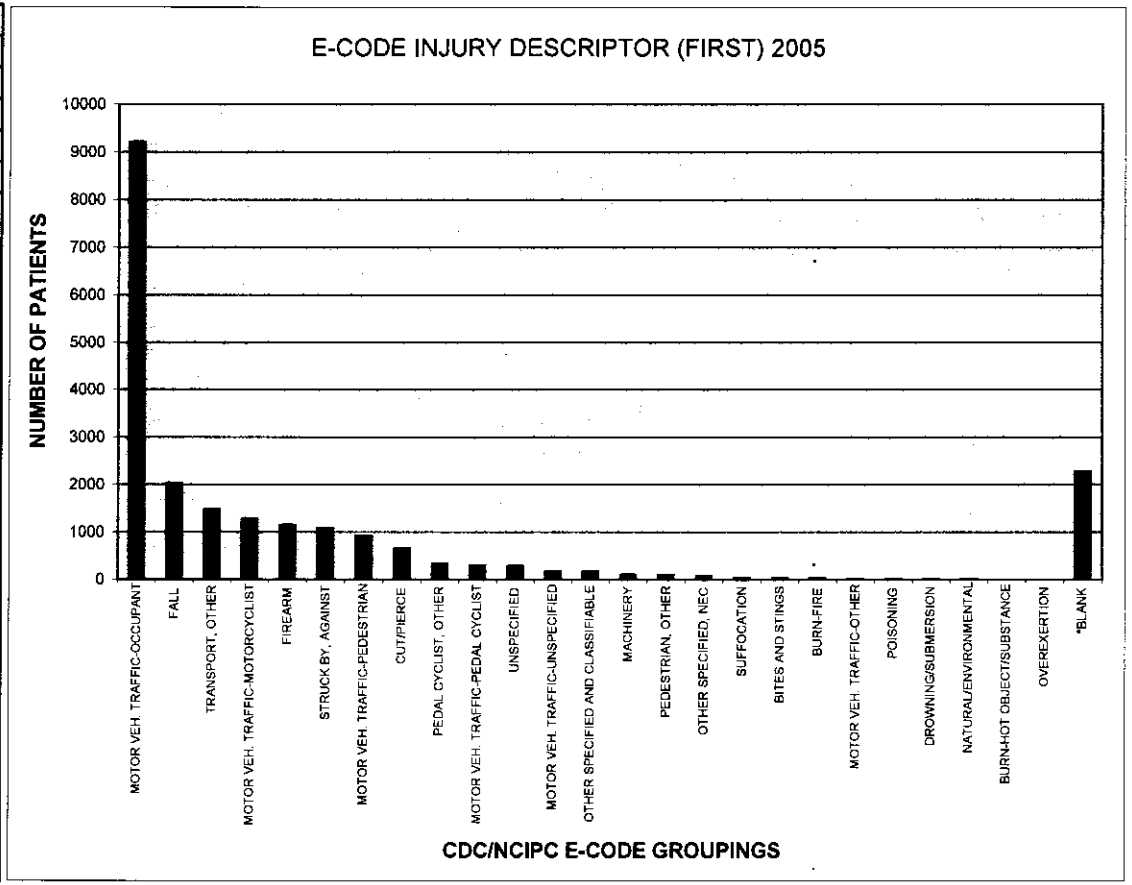
INJURY PLACE OF OCCURRENCE 2005



E849 INJURY PLACE OF OCCURRENCE	NUMBER	PERCENTAGE
849.5 STREET OR HIGHWAY	13002	60.02
849.9 UNSPECIFIED PLACE	2016	9.31
849.0 HOME	1820	8.40
849.4 RECREATION OR SPORT	1372	6.33
849.8 OTHER SPECIFIED PLACE	673	3.11
849.3 INDUSTRIAL	582	2.69
849.6 PUBLIC BUILDING	290	1.34
849.7 RESIDENTIAL INSTITUTION	185	0.85
849.1 FARM	38	0.18
849.2 MINE OR QUARRY	15	0.07
*BLANK	1349	6.23
*NOT DOCUMENTED	313	1.44
*NOT APPLICABLE	7	0.03
TOTAL	**21662**	**100.00**

ICD-9-CM E-CODE INJURY DESCRIPTOR 2005

CDC/NCIPC E-CODE MECHANISM GROUPINGS *	NUMBER
MOTOR VEH. TRAFFIC-OCCUPANT	9198
FALL	2033
TRANSPORT, OTHER	1476
MOTOR VEH. TRAFFIC-MOTORCYCLIST	1278
FIREARM	1141
STRUCK BY, AGAINST	1075
MOTOR VEH. TRAFFIC-PEDESTRIAN	910
CUT/PIERCE	651
PEDAL CYCLIST, OTHER	326
MOTOR VEH. TRAFFIC-PEDAL CYCLIST	288
UNSPECIFIED	281
MOTOR VEH. TRAFFIC-UNSPECIFIED	169
OTHER SPECIFIED AND CLASSIFIABLE	165
MACHINERY	105
PEDESTRIAN, OTHER	93
OTHER SPECIFIED, NEC	67
SUFFOCATION	35
BITES AND STINGS	27
BURN-FIRE	22
MOTOR VEH. TRAFFIC-OTHER	17
POISONING	15
DROWNING/SUBMERSION	10
NATURAL/ENVIRONMENTAL	7
BURN-HOT OBJECT/SUBSTANCE	6
OVEREXERTION	4
*BLANK	2263
TOTAL **	21662



*Groupings based on the CDC/National Center for Injury Prevention and Control's *Recommended framework of E-code groupings for presenting injury mortality and morbidity data (February 16, 2005)*, http://www.cdc.gov/ncipc/whatsnew/matrix2.htm.

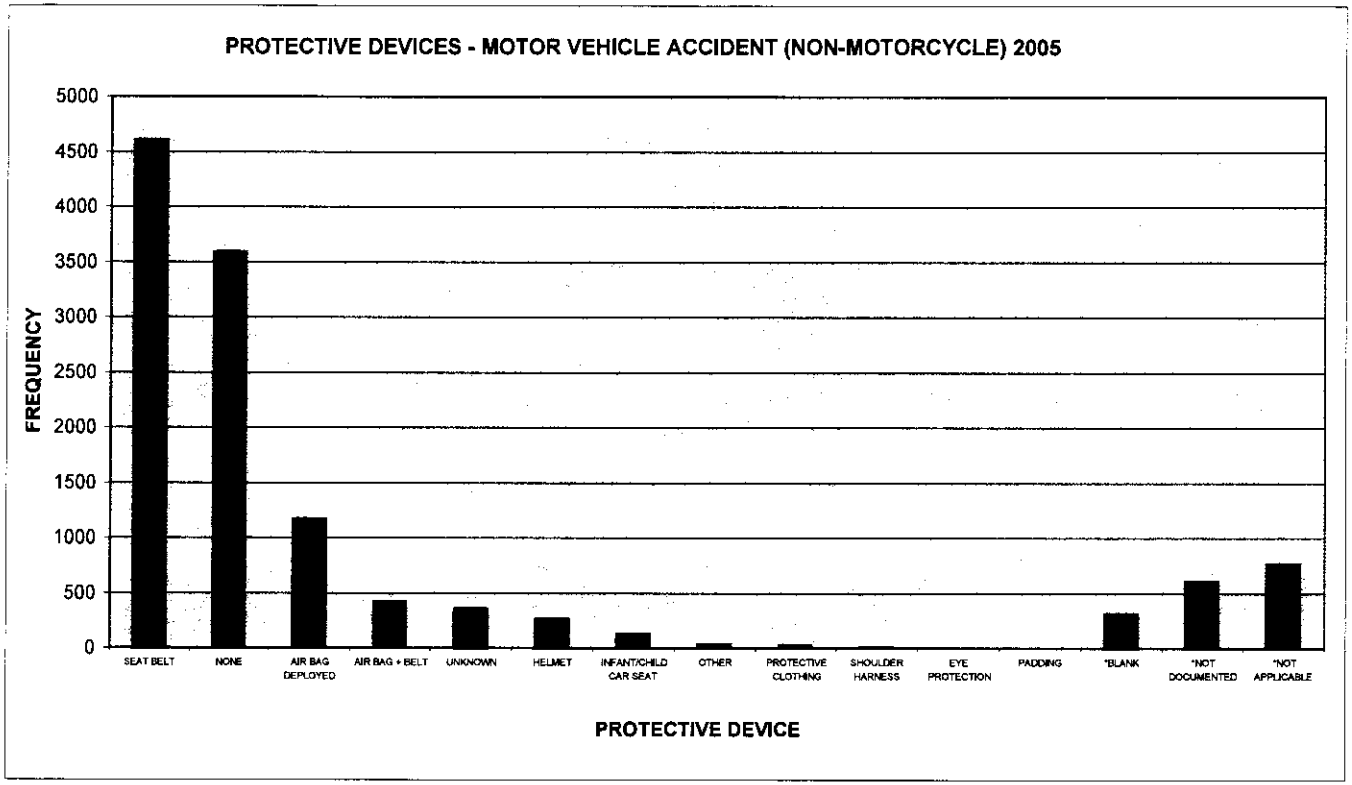
**NOTE: This report is based on the first E-code entered per patient. Total 2005 E-codes in ASTR system = 21911. ASTR system currently only downloads one E-code per patient, and registrars are instructed to enter the primary external cause of injury first.

ICD9-CM INJURY DIAGNOSIS 2005

ICD-9-CM INJURY DIAGNOSIS	FREQUENCY
910-919 SUPERFICIAL INJURY	6740
920-924 CONTUSION WITH INTACT SKIN SURFACE	6383
870-879 OPEN WOUND OF HEAD, NECK, AND TRUNK	5423
805-809 FRACTURE OF NECK AND TRUNK	5032
850-854 INTRACRANIAL INJURY, EXCLUDING THOSE WITH SKULL FRACTURES	4622
800-804 FRACTURE OF SKULL	3829
860-869 INTERNAL INJURY OF CHEST, ABDOMEN, AND PELVIS	3498
810-819 FRACTURE OF UPPER LIMB	2638
820-829 FRACTURE OF LOWER LIMB	2527
840-848 SPRAINS AND STRAINS OF JOINTS AND ADJACENT MUSCLES	1783
880-887 OPEN WOUND OF UPPER LIMB	1369
890-897 OPEN WOUND OF LOWER LIMB	814
830-839 DISLOCATION	618
900-904 INJURY TO BLOOD VESSELS	394
958-959 CERTAIN TRAUMATIC COMPLICATIONS AND UNSPECIFIED INJURIES	342
950-957 INJURY TO NERVES AND SPINAL CORD	240
940-949 BURNS	213
925-929 CRUSHING INJURY	68
990-995 OTHER AND UNSPECIFIED EFFECTS OF EXTERNAL CAUSES	31
996-999 COMPLICATIONS OF SURGICAL AND MEDICAL CARE, NOT ELSEWHERE CLASSIFIED	13
960-979 POISONING BY DRUGS, MEDICINAL, AND BIOLOGICAL SUBSTANCES	4
930-939 EFFECTS OF FOREIGN BODY ENTERING THROUGH ORIFICE	3
905-909 LATE EFFECTS OF INJURIES, POISONINGS, TOXIC EFFECTS, AND OTHER EXTERNAL CAUSES	3
980-989 TOXIC EFFECTS OF SUBSTANCES CHIEFLY NON-MEDICINAL AS TO SOURCE	2
*BLANK	8221
*NOT DOCUMENTED	2069
Total **	**56879**

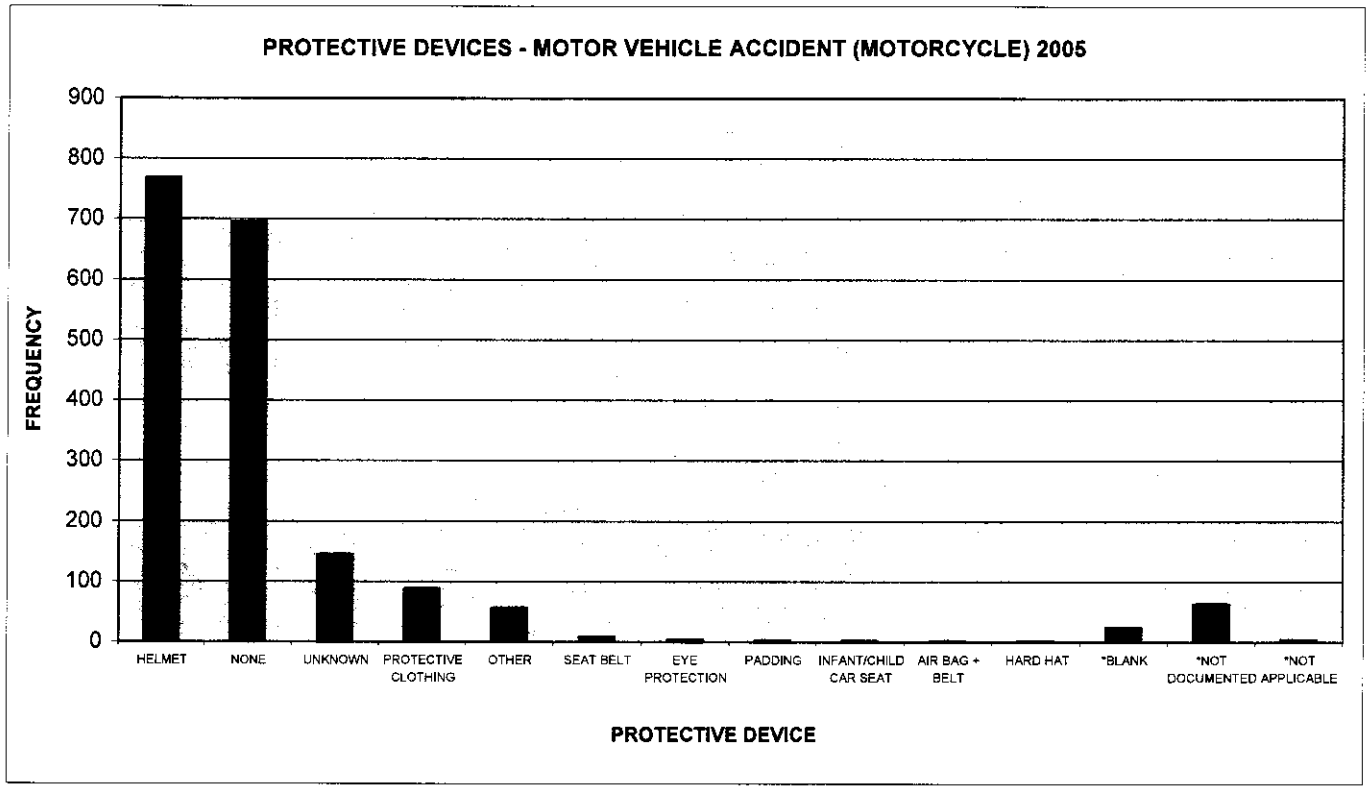
** Note: The ICD9-CM diagnosis field allows for entry of multiple diagnoses per patient. The total in this report is based on the occurrence of the ICD-9-CM diagnosis and is not a total patient count.

PROTECTIVE DEVICES MOTOR VEHICLE ACCIDENTS (NON-MOTORCYCLE) 2005



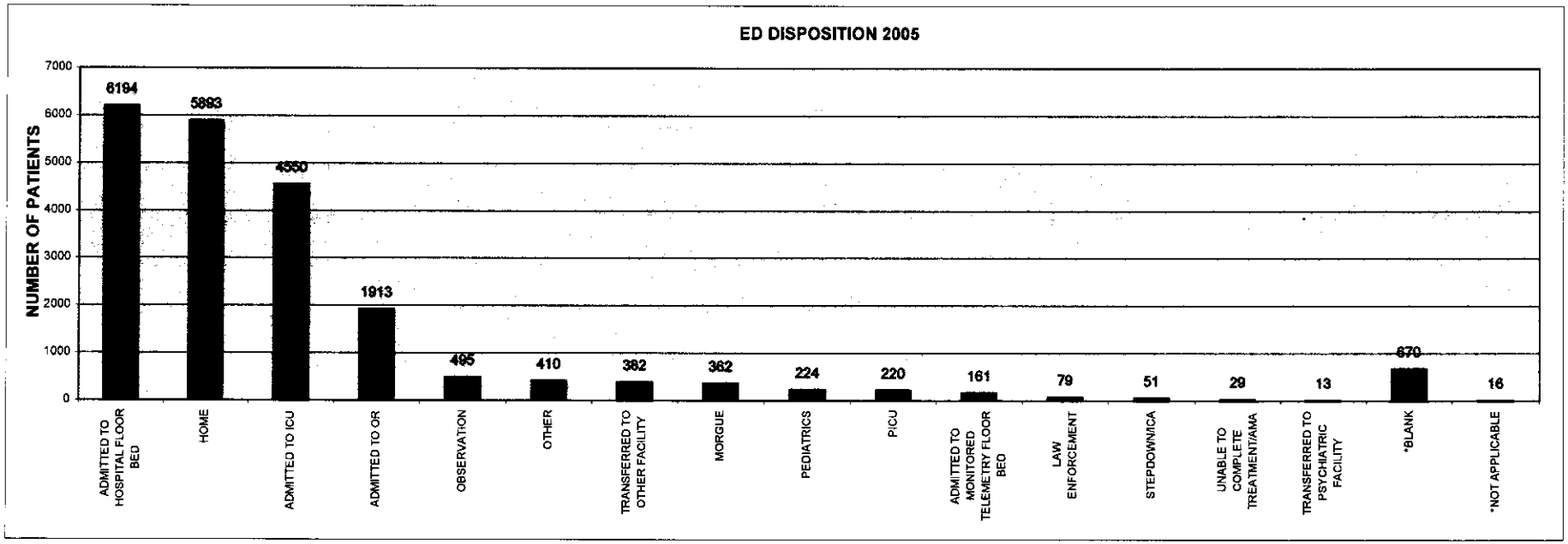
PROTECTIVE DEVICE	FREQUENCY
SEAT BELT	4609
NONE	3589
AIR BAG DEPLOYED	1171
AIR BAG + BELT	414
UNKNOWN	353
HELMET	261
INFANT/CHILD CAR SEAT	125
OTHER	33
PROTECTIVE CLOTHING	25
SHOULDER HARNESS	9
EYE PROTECTION	2
PADDING	2
*BLANK	312
*NOT DOCUMENTED	607
*NOT APPLICABLE	763
TOTAL	**12275**

PROTECTIVE DEVICES MOTOR VEHICLE ACCIDENTS (MOTORCYCLE) 2005



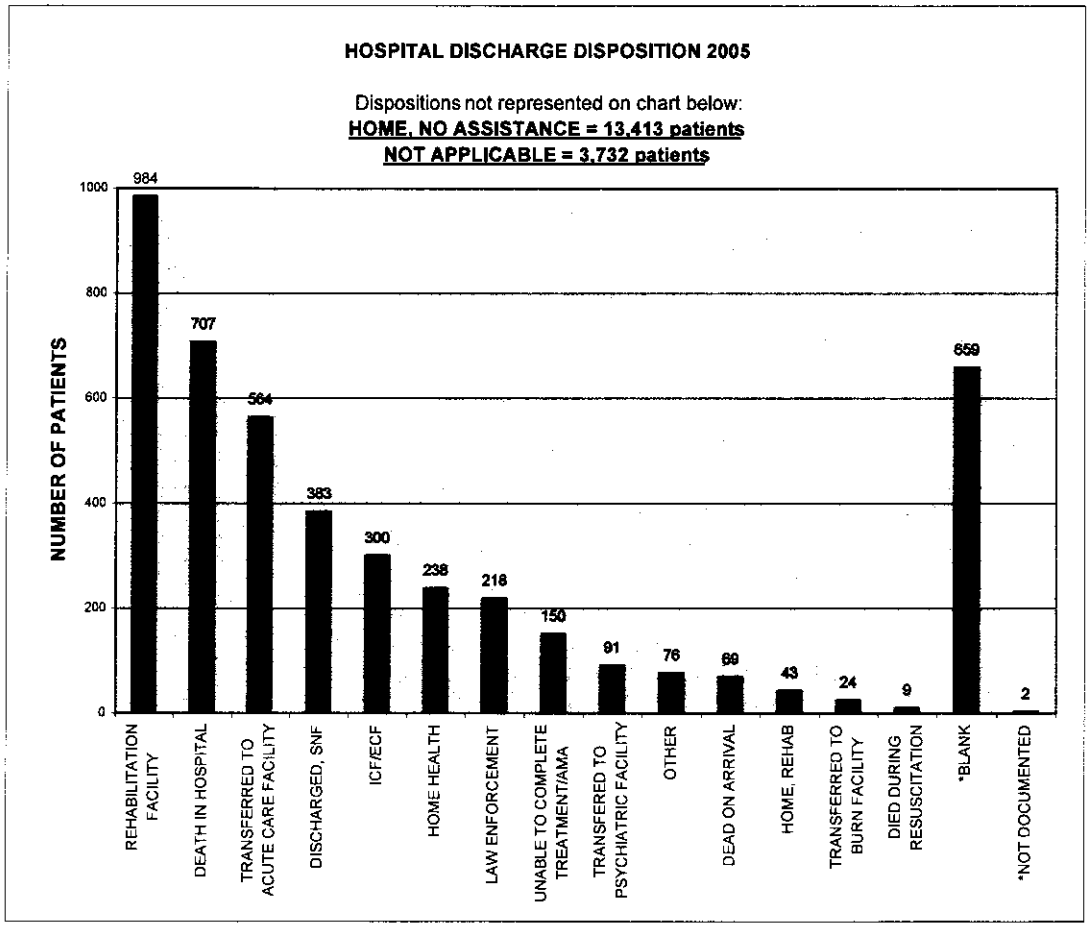
PROTECTIVE DEVICE	FREQUENCY
HELMET	768
NONE	695
UNKNOWN	145
PROTECTIVE CLOTHING	88
OTHER	56
SEAT BELT	8
EYE PROTECTION	4
PADDING	3
INFANT/CHILD CAR SEAT	2
AIR BAG + BELT	2
HARD HAT	1
*BLANK	24
*NOT DOCUMENTED	63
*NOT APPLICABLE	4
TOTAL	1863

EMERGENCY DEPARTMENT DISPOSITION 2005



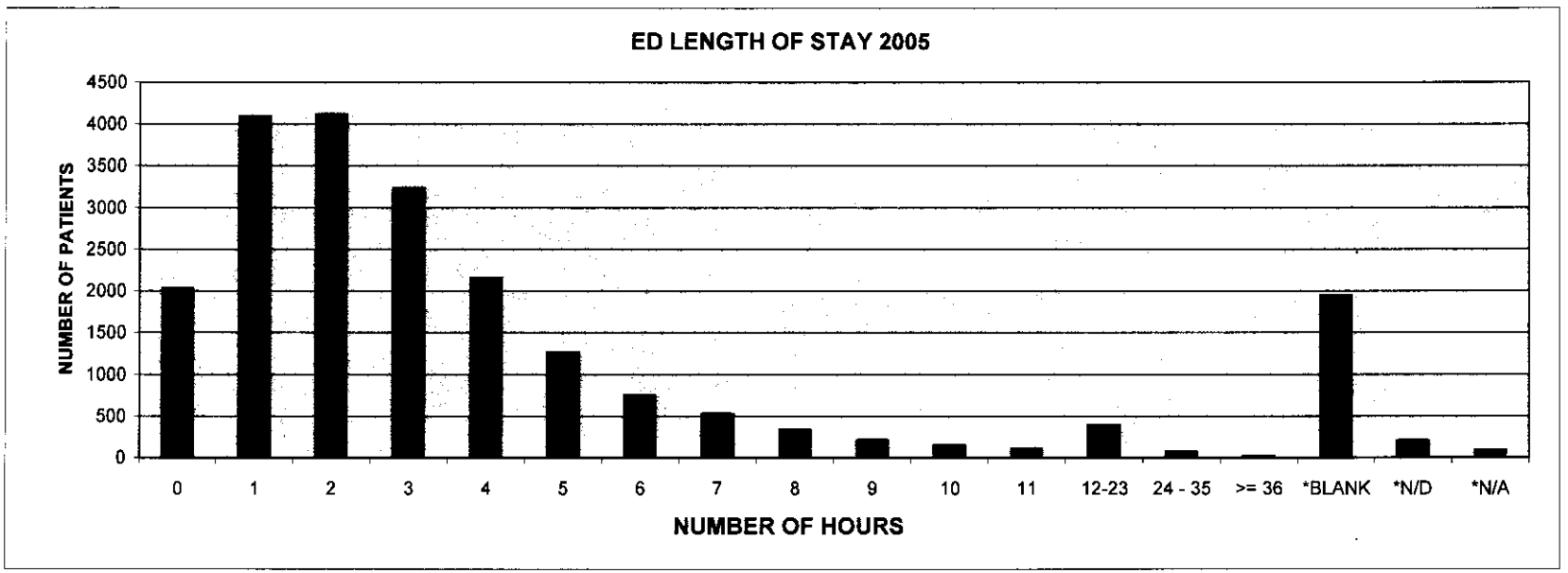
ED DISPOSITION	NUMBER	PERCENTAGE
ADMITTED TO HOSPITAL FLOOR BED	6194	28.59
HOME	5893	27.20
ADMITTED TO ICU	4550	21.00
ADMITTED TO OR	1913	8.83
OBSERVATION	495	2.29
OTHER	410	1.89
TRANSFERRED TO OTHER FACILITY	382	1.76
MORGUE	362	1.67
PEDIATRICS	224	1.03
PICU	220	1.02
ADMITTED TO MONITORED TELEMETRY FLOOR BED	161	0.74
LAW ENFORCEMENT	79	0.36
STEPDOWN/ICA	51	0.24
UNABLE TO COMPLETE TREATMENT/AMA	29	0.13
TRANSFERRED TO PSYCHIATRIC FACILITY	13	0.06
*BLANK	670	3.09
*NOT APPLICABLE	16	0.07
TOTAL	**21662**	**100.00**

HOSPITAL DISCHARGE DISPOSITION 2005



DISCHARGE DISPOSITION	NUMBER	PERCENT
HOME, NO ASSISTANCE	13413	61.92
REHABILITATION FACILITY	984	4.54
DEATH IN HOSPITAL	707	3.26
TRANSFERRED TO ACUTE CARE FACILITY	564	2.60
DISCHARGED, SNF	383	1.77
ICF/ECF	300	1.38
HOME HEALTH	238	1.10
LAW ENFORCEMENT	218	1.01
UNABLE TO COMPLETE TREATMENT/AMA	150	0.69
TRANSFERED TO PSYCHIATRIC FACILITY	91	0.42
OTHER	76	0.35
DEAD ON ARRIVAL	69	0.32
HOME, REHAB	43	0.20
TRANSFERRED TO BURN FACILITY	24	0.11
DIED DURING RESUSCITATION	9	0.04
*BLANK	659	3.04
*NOT DOCUMENTED	2	0.01
*NOT APPLICABLE	3732	17.23
TOTAL	**21662**	**100.00**

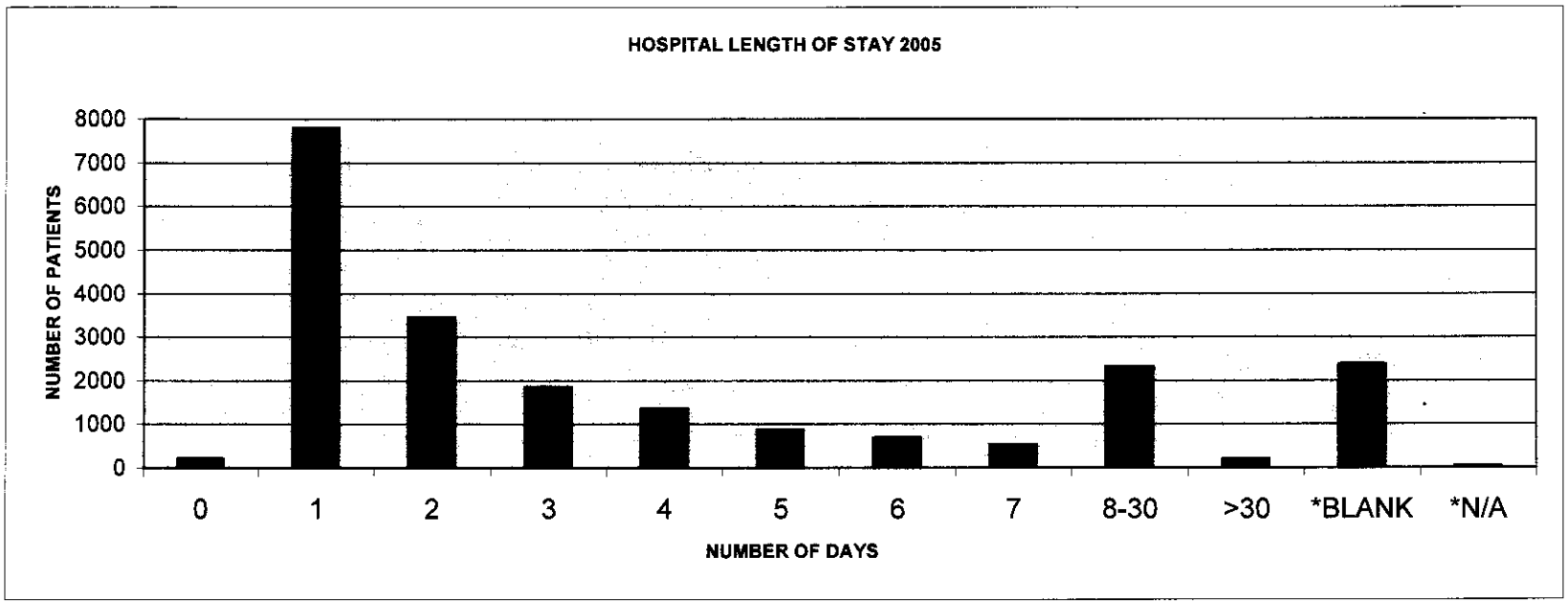
LENGTH OF STAY (HOURS) IN EMERGENCY DEPARTMENT 2005



LENGTH OF STAY (HOURS) IN ED	NUMBER	PERCENTAGE
0	2025	9.35
1	4092	18.90
2	4116	19.01
3	3236	14.95
4	2153	9.94
5	1264	5.84
6	742	3.43
7	526	2.43
8	334	1.54
9	214	0.99
10	150	0.69
11	107	0.49
12-23	386	1.78
24 - 35	66	0.30
>= 36	22	0.05
*BLANK	1943	8.97
*N/D	203	0.94
*N/A	82	0.38
TOTAL *	**21661**	**100.00**

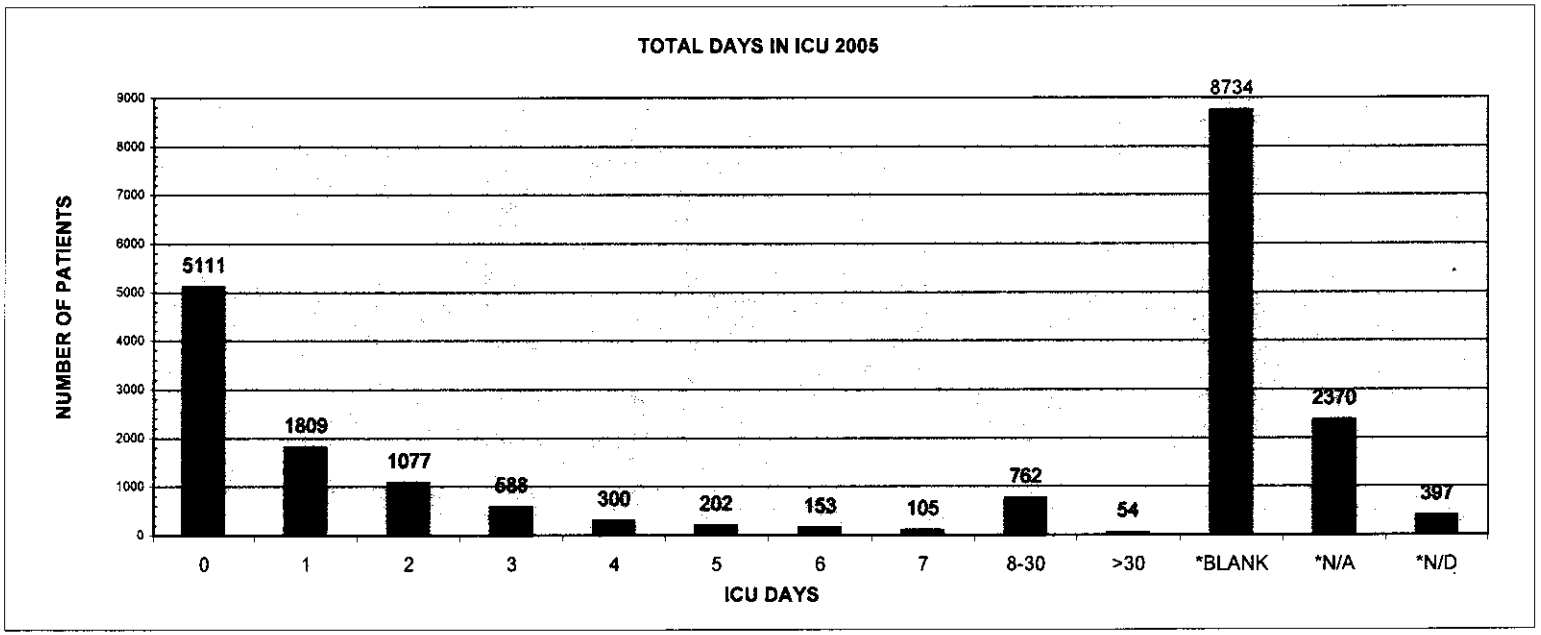
*Note: This field needs further clean-up to address inconsistencies in the data. Values range from -22 to 8777 hours.

HOSPITAL LENGTH OF STAY (DAYS) 2005



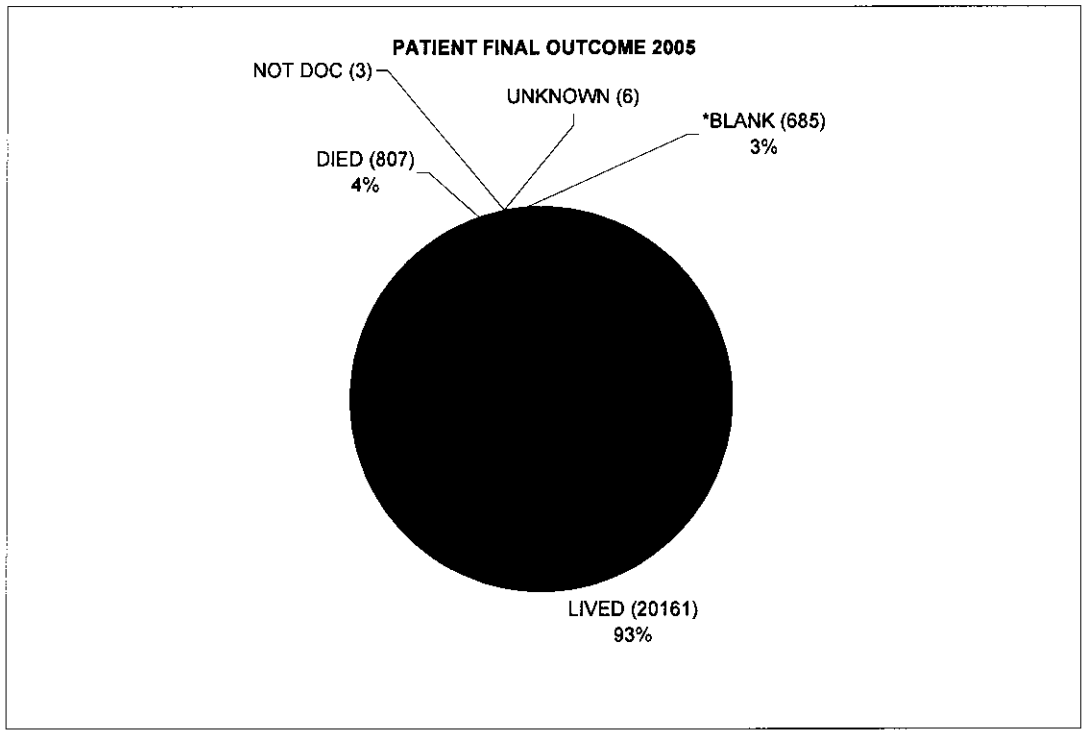
HOSPITAL LENGTH OF STAY (DAYS)	NUMBER	PERCENTAGE
0	207	0.96
1	7793	35.98
2	3448	15.92
3	1851	8.54
4	1353	6.25
5	873	4.03
6	683	3.15
7	523	2.41
8-30	2308	10.65
>30	199	0.92
*BLANK	2383	11.00
*N/A	41	0.19
TOTAL	**21662**	**100.00**

TOTAL DAYS IN ICU 2005



TOTAL DAYS IN ICU	NUMBER	PERCENTAGE
0	5111	23.59
1	1809	8.35
2	1077	4.97
3	588	2.71
4	300	1.38
5	202	0.93
6	153	0.71
7	105	0.48
8-30	762	3.52
>30	54	0.25
*BLANK	8734	40.32
*N/A	2370	10.94
*N/D	397	1.83
TOTAL	21662	100.00

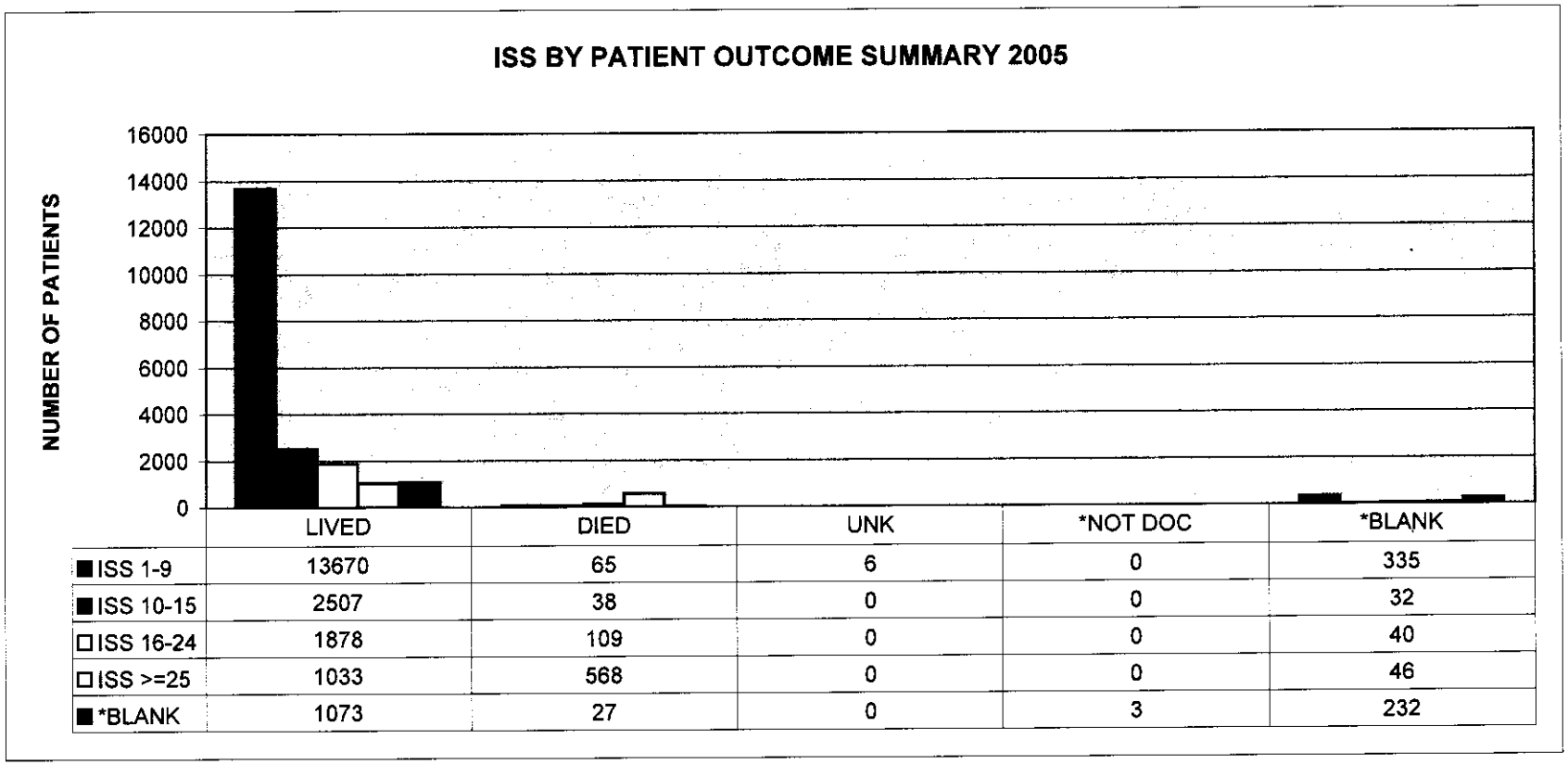
PATIENT FINAL OUTCOME 2005



OUTCOME	NUMBER	PERCENT
LIVED	20161	93.07
DIED	807	3.73
UNKNOWN	6	0.03
*NOT DOC	3	0.01
*BLANK	685	3.16
TOTAL	**21662**	**100.00**

Note: NOT DOC means Not Documented

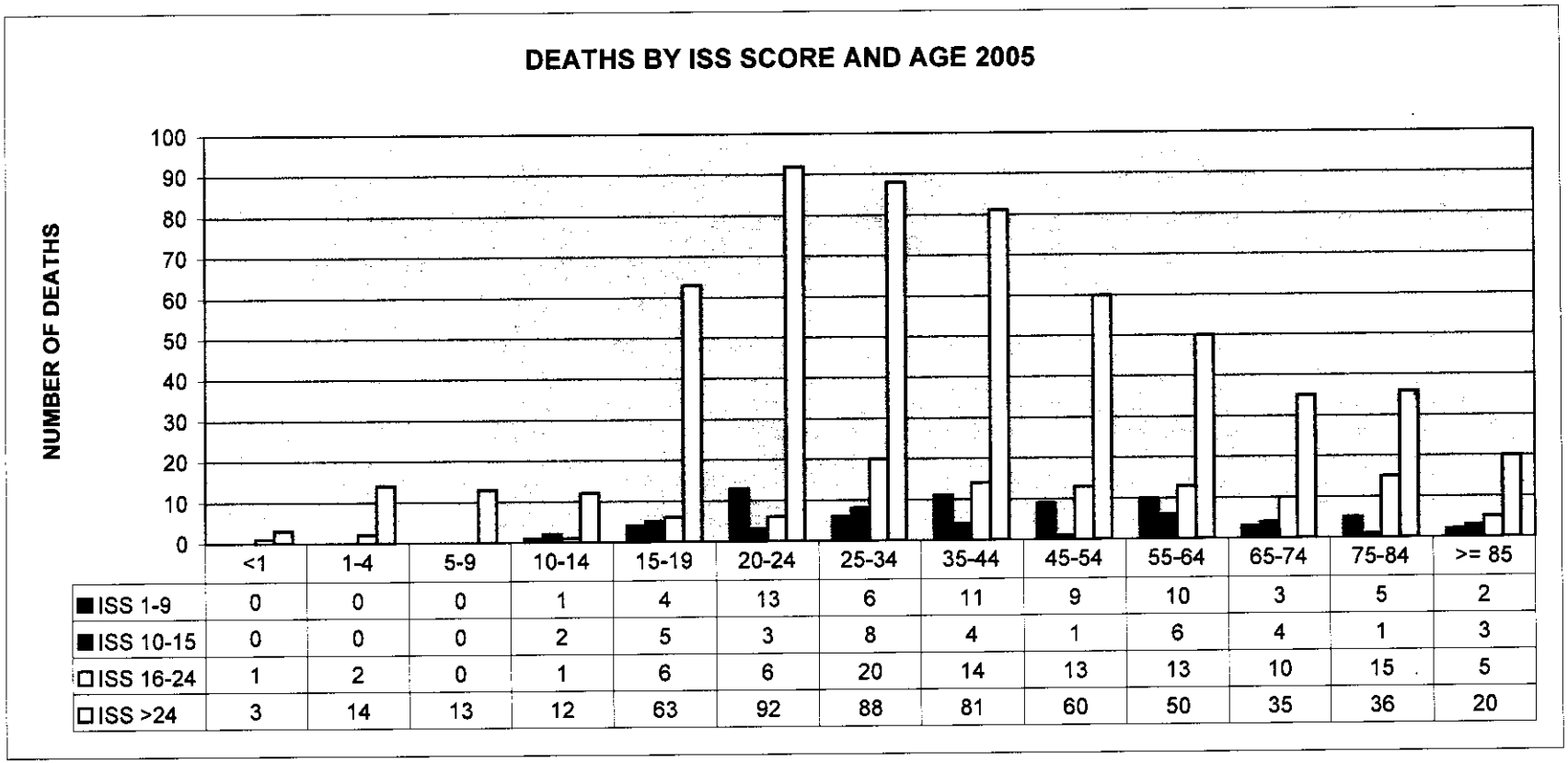
INJURY SEVERITY SCORE BY PATIENT OUTCOME SUMMARY 2005



ISS	LIVED	DIED	UNK	NOT DOC	*BLANK	TOTAL
ISS 1-9	13670	65	6	0	335	**14076**
ISS 10-15	2507	38	0	0	32	**2577**
ISS 16-24	1878	109	0	0	40	**2027**
ISS >=25	1033	568	0	0	46	**1647**
***BLANK**	1073	27	0	3	232	**1335**
TOTAL	**20161**	**807**	**6**	**3**	**685**	**21662**

Note: NOT DOC means Not Documented

DEATHS BY ISS SCORE AND AGE 2005



AGE	ISS 1-9	ISS 10-15	ISS 16-24	ISS >24	TOTAL
<1	0	0	1	3	4
1-4	0	0	2	14	16
5-9	0	0	0	13	13
10-14	1	2	1	12	16
15-19	4	5	6	63	78
20-24	13	3	6	92	114
25-34	6	8	20	88	122
35-44	11	4	14	81	110
45-54	9	1	13	60	83
55-64	10	6	13	50	79
65-74	3	4	10	35	52
75-84	5	1	15	36	57
>= 85	2	3	5	20	30
TOTAL	64	37	106	567	774

Note: Patient count = 807, Patients processed = 774